

Ad hoc Committee third round review:  
“Measurement of deeply virtual Compton scattering off Helium-4 with  
CLAS at Jefferson Lab”

Committee: Axel Schmidt (chair), Harut Avakian, Zein-Eddine Meziani

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Having discussed your latest response, here are changes we would like to see implemented in order to give our final approval of the paper:

- The sentences beginning at line 286, currently reading:

*“To make the correction on the DVCS BSA, we assume that the exclusive  $\pi^0$  production has no such asymmetry. This has been checked with the exclusive  $\pi^0$  production data, for which no significant level of BSA was measured.”*

have confused us for quite a while because of connotations of “correction” and “subtraction.” Thank you for your explanations, and we are now comfortable in recommending that you replace the above with:

*After subtracting this contamination, we make no further correction to the DVCS BSA, i.e., we assume the exclusive  $\pi^0$  production has no such asymmetry in either the coherent or incoherent channels. Our own exclusive  $\pi^0$  data rules out any BSA above approximately 10%, a level which would have an insignificant effect on our results given the small amount of contamination.*

- We recommend you replace the sentence beginning at line 299, currently reading:

*“We also checked different methods to make the simulation of the exclusive  $\pi^0$  production and accounted for a possible undetected asymmetry in its signal to evaluate the possible bias introduced by this correction.”*

with

*We studied how different methods of simulating the exclusive  $\pi^0$  production affected the single-photon background and further estimated the how much bias could arise from an undetected BSA in this process.*

- In Figure 16, please indicate in the caption or through y-axis labels that the plots show a fraction, e.g., “contamination estimated” → “contamination fraction estimated”

With these, or equivalent changes, we are glad to give our final approval.

Other things we found, which you can change if you want:

- Line 210: Issue of number agreement

“The electrons are detected with the baseline CLAS detectors, the drift chamber measures the kinematic of the electron and the signal measured in both the Cerenkov counter and electromagnetic calorimeter provide the identification.”

→

“The electrons are detected with the baseline CLAS detectors: the drift chamber measures the kinematics of the electrons and the signals measured in both the Cerenkov counter and electromagnetic calorimeter provide the identification.”

- Line 213: same thing

“Protons are detected with the baseline CLAS detectors as well, the drift chamber measures the kinematic of the proton and the time-of-flight system ensure its identification.”

→

“Protons are detected with the baseline CLAS detectors as well: the drift chamber measures the kinematics of the protons and the time-of-flight system ensures their identification.”

- Line 222: add a sentence break:

“However, the detection of an electron at a larger angle in CLAS highly suppresses the number of electrons in the **calorimeter**. **Moreover**, the exclusivity cuts used later in the analysis further this suppression.”

- Line 224: “Left over accidentals” → “Leftover accidentals” since it is modifying following noun, rather than preceding verb.